

## Great Plains farmers are diversifying

The days of growing wheat every other year or two and leaving the ground bare the rest of the time are a thing of the past in the Great Plains states. Agricultural Research Service (ARS) scientists are giving farmers more than a dozen crops to choose from each year, and the means to make choices from among more than 100 possible combinations.

The ARS scientists have also developed a free CD farmers can insert in their computers to calculate which crops to plant after inputting the latest market prices.

Jon Hanson, research leader of the ARS Northern Great Plains Research Laboratory in Mandan, N.D., calls this new approach “dynamic farming.” Dynamic farming systems provide a diversified portfolio of crops for farmers in the Northern Great Plains to choose from. Farmers can change crops quickly in response to sudden changes in market conditions, weather or government policy.

Merle Vigil, research leader of the ARS Central Great Plains Resources Management Research Unit in Akron, Colo., uses the same approach for the Central Great Plains.

All of this was made possible by the introduction of no-till and related conservation tillage techniques which leave a cover of unharvested plant parts to slow moisture evaporation from the soil. This means there's enough moisture in the soil to sustain crops just about every year. The combination of conservation tillage and annual rotations gives farmers extra income, higher yields, more stability, fewer pests, more protection against drought, less soil erosion and more water.

The order in which crops are grown has to be chosen carefully, considering such factors as the amount of residue a crop leaves, and root depth.

The scientists have found that how residue is managed can make a big difference at harvest - 10 to 20 extra bushels of corn per acre, in just one example. They are constantly studying ways to improve the systems, including adding new crops and varieties. They're also researching all the factors responsible for obtaining the greatest economic return while minimizing risk.

Read more about the research in Agricultural Research magazine:

<http://www.ars.usda.gov/is/AR/archive/jun05/wheat0605.htm>